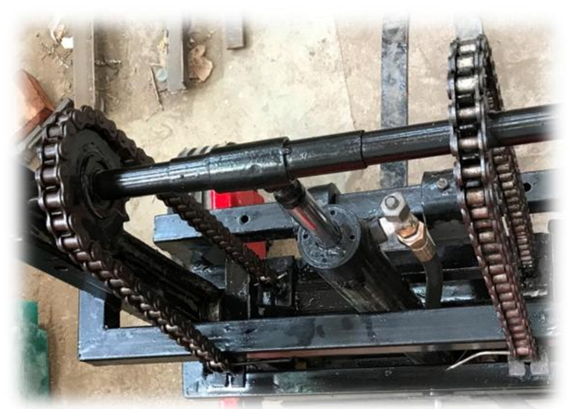
Chapter (5) : Project Validation

Validation of Body Chassis Assembly

It took long time to assembly all the metallic parts together by many types of connecting like welding, …

The front and back parts of chassis is successfully assembled. Front body, Back body, Mast, Carriage, Forks and Backward Cover, In addition to wheels and differential with it's axes, and following images shows that:









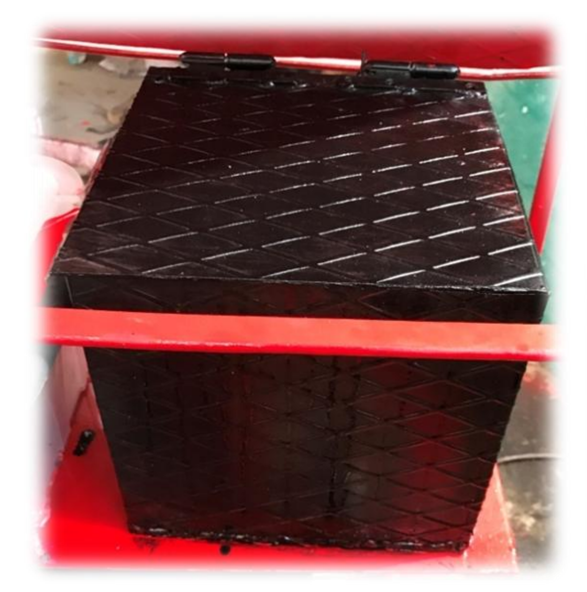




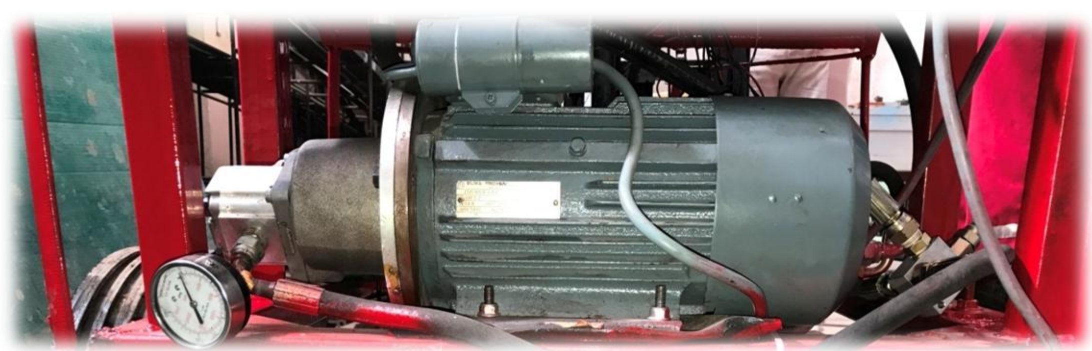
Validation of Hydraulic Circuit

Tank, Pump, Different Control Valves, motor, Cylinders and Hoses had been perfectly assembled together.

First of all Pump combined with the electric motor, then all valves with their bases are installed in the good position for them, also hydraulic motor and cylinders, then hoses are fitted to connect all of these components together, and following images shows that :



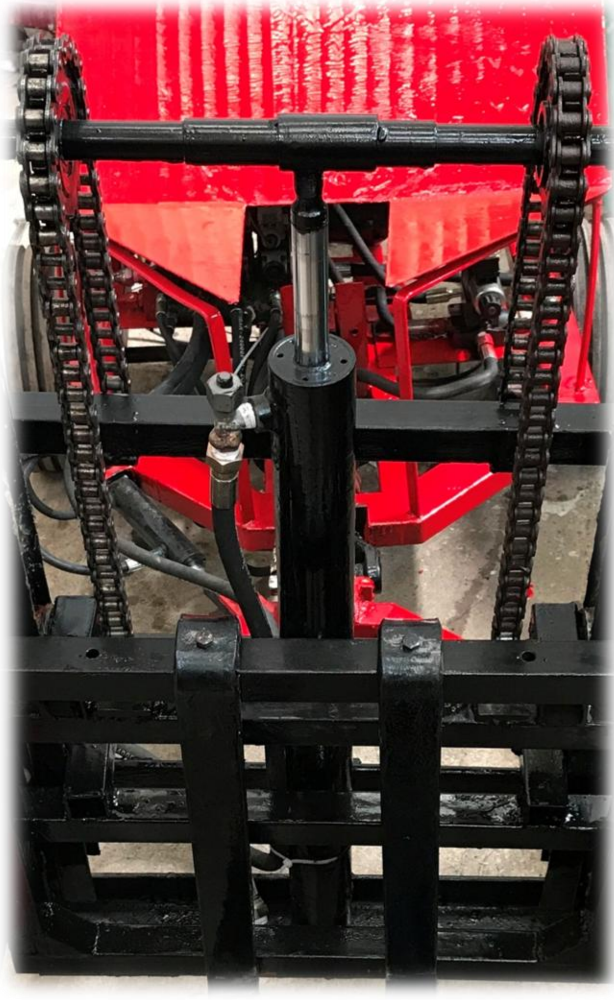





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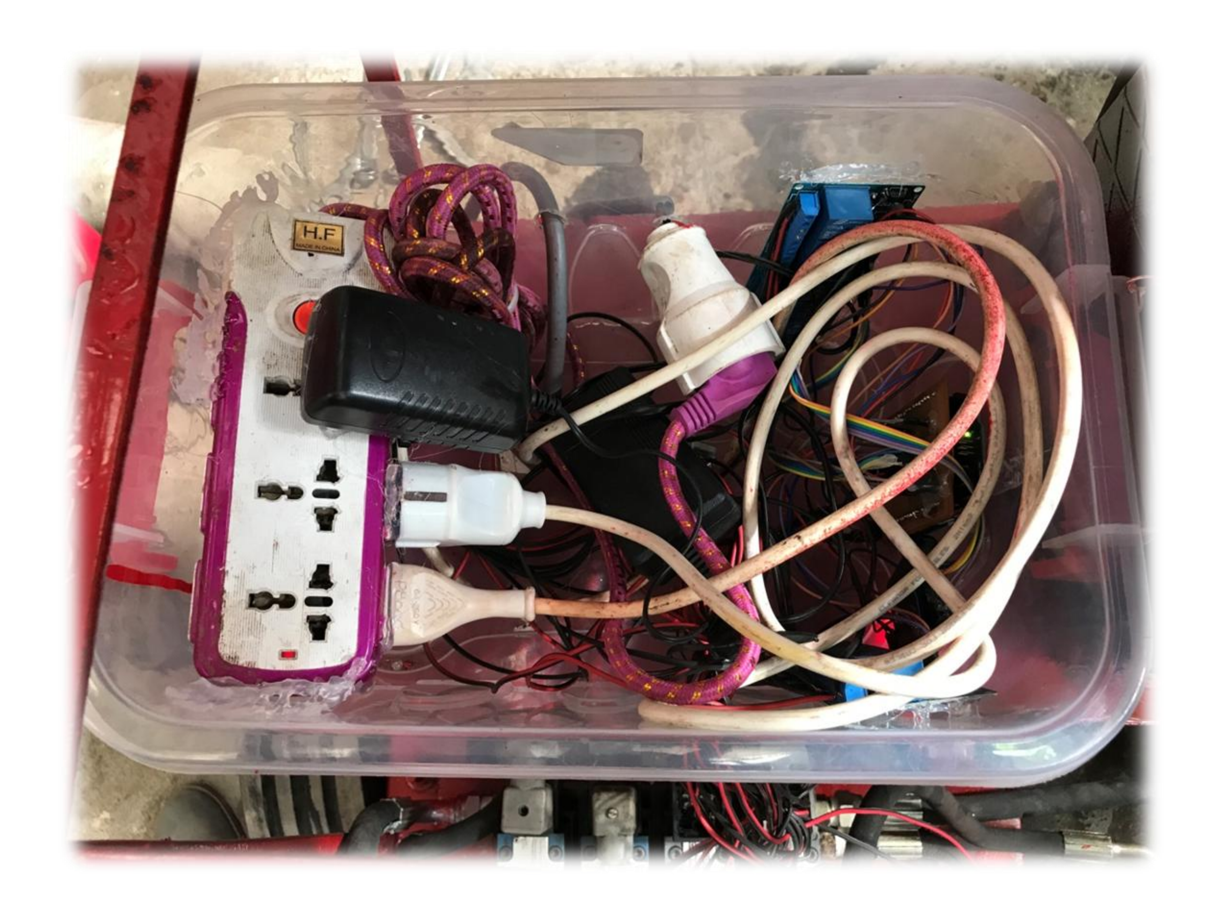

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Validation of control System

All electric components are fitted accurately together in a plastic package and wires connected them all together to achieve the goal of sending and receiving signals from all buttons of the hand operated joystick, and following images shows that :



Validation of Project Operation

Firstly, when the on/off button is pushed, all Leds are switched on indicating receiving signals.

The operator handles the joystick and check all orders.



Then, the operator gives orders to lift up and down a massive metallic tank weights about 200 kg.





After that he tried steering right and left.





Then he tried to tilting the front body in the two directions.





Finally he tried the carriage circuit going forward and backward.





Now, we can say that it's ready to be mass producted after some simple modifications.

References

1- Fluid Power with applications – 7th edition.
2- Fluid_Power_Engineering_By_M.Galal_Rabea.
3- Hydraulics and Pneumatics_By_Andrew A. Parr.
4- Simplify Arduino By Abd-Allah Ali